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ABSTRACT

This report presents a brief overview of the most common approaches to the calculation of transfer rates and discusses the use of a transfer rate as a measure of institutional effectiveness. It provides an overview of existing practices and helps to inform a discussion of whether or not transfer rate data should be collected from British Columbia (BC) public postsecondary institutions and how transfer rates should be calculated. The issue of how best to calculate a transfer rate depends in part upon the purpose underlying the collection of such information. If the rate is to be used as a measure of college effectiveness with consequences that follow for the institution depending upon its "success," then how the rate is calculated becomes very important. The key difference in the calculation of various transfer rates rests in the precise definitions of entering or exiting student cohort, time frame for transfer, minimum number of college credits completed, type of curriculum studied, and student intent to transfer. The report looks at transfer rates and the BC postsecondary system and discusses possible transfer rate models in the BC context: entering student cohort model, exiting student cohort model, transfer readiness model, and transfer of credits model. Some recommendations conclude the report. Contains 10 references. (VWC)

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# Transfer Rates: How to measure and for what purpose?

*A discussion paper*

**November 1999**

**Frank Gelin**
Executive Director and Co-Chair
BC Council on Admissions and Transfer

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## Introduction

This discussion paper was prepared at the request of the Key Performance Indicators Working Group which is a subcommittee of the Standing Committee on Evaluation and Accountability which in turn reports jointly to the Ministry of Advanced Education, Training and Technology and the Advanced Education Council of British Columbia. The purpose of the paper is to present a brief overview of the most common approaches to the calculation of transfer rates. The use of a transfer rate as a measure of institutional effectiveness is also discussed. The paper is not intended to be a comprehensive review of the literature but rather to provide an overview of existing practices and to help inform a discussion of whether or not transfer rate data should be collected from B.C. public post-secondary institutions and how transfer rates could be calculated.[1]

## Definitions

Most of the literature on transfer rates stems from research conducted in the United States where the issue of transfer rates has been debated extensively for the past two decades. For the purposes of this discussion paper and unless otherwise specified, "colleges" refers to two year community colleges or institutes that offer one year certificates and two year diplomas or associate degrees and "universities" refers to four year degree granting institutions that primarily offer baccalaureate degrees. In the context of B.C. institutions, four-year degree granting institutions including the university colleges, the Open Learning Agency, BCIT, and Emily Carr Institute of Art and Design are operationally defined to be both colleges and universities. Transfer refers to students completing courses in one institution and receiving transfer credit for these courses in another institution. This includes students who enrol in arts and science programs and continue their academic studies or transfer into career or technical degree programs at another institution or vice versa.

## Calculating Transfer Rates

The issue of how best to calculate a transfer rate depends in part upon the purpose underlying the collection of such information. If the rate is merely an arithmetic measure of student mobility between various segments of a post-secondary system, then any number of methodologies should suffice. But if the transfer rate is to be used as a measure of college effectiveness (that is, of the effectiveness of the "sending" function of the transfer system) with consequences that follow for the institution depending upon its "success," then how the rate is calculated becomes very important (Fonte, 1993). However, even measures intended to capture student mobility may be interpreted by others as measures of institutional success or failure of the transfer function. So in either case, attention to how transfer rates are calculated is important.

Transfer rates are usually expressed as a percentage and are calculated by taking some measure of the number of students who have transferred (the numerator) and dividing

[1] The views expressed in this paper are those of the author and do not necessarily reflect the views of the BC Council on Admissions and Transfer.

that by some measure of the number of students who could potentially transfer (the denominator) and multiplying the result by 100%.

Transfer rates reported in the literature range from 5% to 84% (Cohen, 1990). A very low transfer rate can be obtained by dividing the number of students who transfer by the entire college enrolment. Conversely, a very high transfer rate can be obtained by dividing the number of students who transferred by the number of students who indicated when they enrolled initially that they intended to transfer and who had completed 60 credits of university transfer courses. These different approaches express extremes of inclusion and exclusion and they help explain the inconsistent pattern of transfer rates published in the literature and in journalistic reports (Fonte, 1993). Given the large variety of transfer rate measures that have been developed it is important to note the lack of consensus on which transfer rate to use (Spicer and Armstrong, 1996). However, two national initiatives have been funded in the United States in an attempt to determine a single, accepted transfer rate definition.

### National Transfer Effectiveness Consortium Project

The first initiative was undertaken by the National Transfer Effectiveness Consortium (NETC) and involved 28 colleges (Berman, Curry, Nelson, & Weiler, 1990). The transfer rate measure used in this project was as follows:

> Denominator: the number of students who were enrolled at a college during the fall and/or spring semester in a given academic year, who had completed at least 6 college-level credits by the end of the spring semester, and who did not return to the same college in the subsequent fall semester.
>
> Numerator: the number of students in the denominator *who enrolled in a university in the fall semester immediately following their enrolment at the college.*

Excluded were students who were concurrently enrolled in a four year institution or possessed a bachelor's degree. Transfer rates approximating 26% were reported from the NETC study.

### Transfer Assembly Project

The second initiative was much larger in scope and began in the 1980s when the Centre for the Study of Community Colleges set out to compute transfer rates nationwide and became known as the Transfer Assembly Project (Cohen & Sanchez, 1997). It was a joint project composed of several national organizations in the United States: the American Association of Community Colleges, the National Center for Academic Achievement and Transfer, the Center on Community College Education, and the Center for the Study of Community Colleges. After an extensive study of plausible alternatives and in consideration of practical methodological issues, the transfer rate measure employed was as follows:

> Denominator: the total number of all students who entered the community college for the first time in a given year, who had no prior college experience, and who completed a minimum of any 12 college-level credits.

Numerator: the number of students in the denominator *who enrolled in one or more classes in a university within four years of initial college entrance* (e.g. enrolled at a college in fall, 1985 and subsequently enrolled at a university by no later than fall, 1989).

Applying this methodology to a sample of 114 community colleges in 27 states, about half of the college entrants with no prior college experience completed 12 or more credits, and of those, on average about 25% transferred. However, there were enormous differences in transfer rates among institutions, ranging from 4.6% to 45.4% among the largest colleges, to 4.1% to 77.8% among the smallest colleges (Jones, 1991).

Data using this transfer rate definition have continued to be collected and as of 1996 there were data collected and analyzed from 416 institutions for 540,000 college students who had initially enrolled in 1990. Of these, 47.1% had completed 12 or more credits and the overall transfer rate for that cohort was 21.8% (Cohen & Sanchez, 1997).

## Considerations Influencing Transfer Rate Definitions

The key difference in the calculation of various transfer rates rests in the precise definitions of the numerator and denominator employed. There are at least five issues to be considered in determining an appropriate definition: entering or exiting student cohort; time frame for transfer; minimum number of college credits completed; type of curriculum studied; and student intent to transfer (Fonte, 1993).

1. Entering or Exiting Student Cohort

   One major difference between the above two methodologies is the use of an exiting student cohort (NETC project) versus an entering student cohort (Transfer Assembly project). Transfer rates based on entering student cohorts are measuring students all of whom entered at a single point in time and therefore include a measure of both transfer and persistence over a defined period. One could argue that the advantage of using an entering student cohort is that it enables an institution to examine changes in transfer rates over time as a function of specific changes made in programs or other interventions to increase transfer rates. On the other hand, rates based on exiting cohorts include students who enter at various points of time and therefore are only a measure of transfer and are not confounded by persistence. Both approaches have merit.

2. Time Frame for Transfer

   Different time frames can be used to determine if a student has transferred from a two-year college to a four-year degree granting institution. The Transfer Assembly definition requires that students transfer within four years of initial college enrolment and thus is somewhat biased against those part-time students who enrol in very few courses over a longer period of time. One study reported that it takes an average of 4.5 years for a community college student to complete a two-year credential (Walleri, Seybert, & Cosgrove, 1992). If this finding can be generalized, the definition would miss a number of students who in fact would eventually transfer after more than four years following initial college entrance.

On the other hand, the NETC exiting cohort definition assumes continuity of enrolment; it ignores the number of students, particularly part-time students, enrolled in the spring semester who "stop out" and do not enrol at either a college or a university in the fall semester. It should be noted that in British Columbia, students not eligible for direct entry to SFU, UBC, UNBC, or UVic must complete a specific number of credits at a college or university college before being eligible for admission.

The question of how long the time frame should be and its impact on transfer rates needs to be considered. It could be argued that the Transfer Assembly definition would be strengthened if a longer time frame, say 6 years, was employed. Likewise, the NETC approach could be modified to include students who, having exited the college at any time, enrolled at a university within two years after exiting rather than within 4 or 8 months.

3. Minimum number of college credits completed

Both definitions cited in the two projects employ a minimum number of credits successfully competed, 6 credits and 12 credits respectively. Underlying this requirement is an assumption that the pool of potential college transfer students should exclude those who had only a very limited connection to the college; that is, students who completed very few credits and therefore have had an insufficient exposure to the curriculum. Without some minimum number of credits required, the transfer rate would only measure student flow and not attempt to reflect the educational impact of community colleges in affecting transfer rates. One could argue that the NETC study should have required more than the completion of only 6 credits.

4. Type of curriculum studied

Neither of the above transfer rate approaches takes into account the nature of the courses studied to meet the minimal credit requirement. Students included in the pool of students expressed in the denominator include students in programs not designed for transfer and in which all or most of the courses are not in fact transferable, such as most vocational courses, some career/technical courses, and many remedial or preparatory academic courses. Although it may be true that some students transfer after having completed a program of vocationally oriented studies, such a number would be expected to be small. By including these students in the definition, the effect on the numerator would be small but the effect on the denominator could be very high depending upon the mix of programs at any particular institution. The overall effect of this approach is to lower the overall transfer rate. Although all students who enrol in university transfer courses may not intend to transfer, the courses per se are designed to prepare students for enrolling in higher level courses in the same discipline or in other higher level academic courses or programs. An argument could be made that any transfer rate definition should measure rates for only those students who have completed at least some university transfer courses (which includes arts and science courses as well as transferable career or technical courses).

5. Student intent to transfer

   Neither transfer rate definition incorporates any measure of a student's intention to transfer. Perhaps transfer effectiveness should be considered to be the ratio of students who do transfer to those who intended to transfer when they entered college. The arguments for exclusion of this variable in any transfer rate measure include the difficulty of obtaining a reliable and meaningful measure of intention to transfer, since students' educational goals and aspirations are not always well defined and even where they are defined, they are often changing. Intent to transfer, however, is an important element in predicting transfer. Using the transfer rate definition of the Transfer Assembly project, data were collected in the state of Illinois that incorporated students' stated primary educational goals (Illinois Community College Board, 1992). For students who enrolled in college level university transfer courses *and* who indicated their intent to transfer, 41.6% transferred to a university. This compared to 32.7% of all students regardless of transfer intentions. Also of interest was that only 11.6% of all students enrolled in "occupational" courses transferred, and of these students, only 8.8% indicated their intent to transfer. It is reasonable to expect that if the pool of students for which transfer rates are calculated is limited to those who expressed an intent to transfer, then the transfer rates would likely be much higher.

## Transfer Rates and the B.C. Post-Secondary System

Given the current trend to address governmental requirements for system wide and institution specific accountability, it is not surprising that some methods of measuring transferability are being contemplated in British Columbia. It would appear that the use of transfer rates as a measure of institutional effectiveness is commonplace in many U.S. states and is supported by the American Association of Community Colleges (AACC, 1994). A recent study of performance-based budgeting in colleges and universities in 30 U.S. states revealed that measures of student transfer were the third most frequently used performance measure following retention/graduation rates and professional licensure test scores (Burke, 1999). It is commonly understood that many students entering community colleges do so with the initial expectation of eventually transferring to a four-year institution and completing their baccalaureate degree. Because this then raises the question as to what proportion of students do in fact transfer the concept of transfer rates becomes important.

The problem with the concept of transfer rates lies both in how to calculate them and what the rate really means in terms of institutional success or effectiveness.

The numerator in the transfer rate equation is a measure of the number of students transferring and is affected by a large number of variables quite independent of the quality of the college learning experience. It is also controlled in part by the receiving institutions. Major factors affecting transfer include: the number of students in college programs that are designed for transfer; proximity to, cost of, and availability of spaces at four-year degree granting institutions and in their respective programs and courses; administrative barriers to transfer; student support services to assist with transfer processes; financial aid availability, and the extent to which courses already completed

are transferable and can fulfill the lower division prerequisites for the program in which the student wishes to enrol. External factors such as local social, employment, and economic conditions can also have a profound impact on student transfer rates.

The denominator in the transfer rate equation is also a function of a number of variables quite independent of the quality of the learning experience. The Transfer Assembly definition captures all students in the college who have completed 12 or more credits in a given year. This transfer rate then is a function of the mix of programs at that institution. Institutions with a larger portion of programs in non-transfer related areas will have a lower transfer rate than an institution that provides predominantly academic arts and science programs. The Transfer Assembly rate is more of a descriptor of student mobility across all programs than a meaningful measure of transfer preparedness or effectiveness of a particular academic program. Transfer rates lose a great deal of their meaning in terms of institutional effectiveness if they are substantively a reflection of institutional program mix. It should also be remembered that students who enrol in academic arts and science programs do not always do so with the intention to transfer even though it is important to them that the courses are transferable. They may take academic courses with the intention of better preparing themselves for general citizenship, career aspirations or simply out of personal interest, with the possibility of transfer being a secondary consideration. So a low transfer rate should not necessarily imply a lack of institutional effectiveness despite the temptation to interpret it as such.

### Possible Transfer Rate Models in the B.C. Context

To address some of the limitations and concerns about the transfer rates employed in the two national initiatives in the United States described above, consideration could be given to some alternative transfer rate models for B.C. institutions as follows:

A. Entering Student Cohort Model

Denominator: the total number of all students who entered a college for the first time in a given year, who had no prior college or university experience, and who in the same academic year successively completed a minimum of 12 college-level credits that have transfer credit to at least one B.C. public four year degree granting institution.

Numerator: the number of students in the denominator *who enrolled in a B.C. public four-year degree granting institution anytime within six years of initial college entrance* (e.g. enrolled at a college in fall, 1994, completed 12 college credits in the 94/95 academic year, and transferred to a B.C. public four-year degree granting institution by no later than fall, 2000).

One could argue that transfer rates should be a measure of transfer for students who have completed a reasonable number of university transferable courses. How many credits this should be is debatable and perhaps it should be higher than 12 credits (e.g. 24 credits). This transfer rate model also extends the time frame to capture a larger portion of students who study on a part-time basis and who "stop out" and re-enrol in a college over a number of years prior to transferring to a university. Its limitation is that it excludes students who initially enrol in non-

transferable courses during their first year and later enrol in transferable courses. This limitation could be overcome by specifying that the 12 credits may be completed within a longer period of time (e.g. within the first two academic years) but this would make the data collection somewhat more complicated.

B. Exiting Student Cohort Model

Denominator: the number of students who were enrolled at a college in any given academic year and had completed at least 12 university transferable credits[2] and who did not return to the same college in the next academic year.

Numerator: the number of students in the denominator *who enrolled in a B.C. public four-year degree granting institution anytime in the next two academic years following their last year of enrolment at the college* (e.g. enrolled at a college in 12 or more credits in 94/95 academic year, did not enrol at same college in 95/96, and enrolled in a public four-year degree granting institution by no later than the 96/97 academic year).

This exiting model does not take into account how long a student may have been enrolled in a college or the number of non-transferable courses a student may have completed before completing 12 university transfer credits.

Where data are available that record student intent to transfer, the above transfer rates could be re-calculated to determine the impact of this variable on transfer. In addition, other transfer rates could be developed if desired to measure transfer for students who have not completed 12 credits in university transfer courses but may have completed a significant number of non-transferable occupationally oriented courses.

It should be noted that neither of the above two models takes into account students who may transfer for legitimate reasons from college to college, university to university, university college to university college, university or university college to college, or from either a university or university college or college to private post-secondary institutions, or to out-of-province institutions. Similar transfer patterns occur involving technical institutes. It is impossible at this time to quantify the impact of such "non-traditional" transfers on the overall transfer rate of any institution. However, it may be considerable. Real growth in the private sector has offered alternative post-secondary routes to many students. Additionally, some colleges are geographically situated so as to provide closer ties to Alberta institutions. For example, a study which involved tracking high school students from the Northern Lights College region (Blades, 1996) found that "North Peace High School Graduates were four times more likely to attend non-B.C. post-secondary institutions than their provincial counterparts." This included students who had transferred from Northern Lights College. "Reverse transfer" of students enrolled in or having completed four-year degree programs and then transferring into career/technical certificate or diploma programs has also been noted as a growing phenomenon.

[2] Perhaps a higher number of credits should be specified (e.g. 24 credits).

Both the entering and exiting student cohort models outlined here require the efficient and accurate tracking of students.

Rather than focusing on transfer studies that measure the proportion of a student population that actually transfer, one could also focus on how well a particular institution prepares students for being able to transfer whether or not they actually do so. Such a measure would only reflect the educational outcome of a sending institution without being affected by a receiving institution's policies and practices that may limit access for transfer students. Boese and Birdsall (1994) developed such a model based on measuring the attainment of transfer eligibility. Such a model could yield a new kind of measure.

C. Transfer Readiness Model

Denominator: the number of first time college students with no prior college experience admitted in any given academic year who expressed their primary educational goal as eventual transfer to a four-year degree granting institution.

Numerator: the number of students in the denominator *who successfully completed "x" college credits of university transferable courses with a 2.0 GPA or better within four years* (and hence minimally eligible for, although not guaranteed, admission to all four-year degree granting institutions).

The ratio of numerator to denominator becomes a "transfer readiness rate" rather than an actual transfer rate. Such a measure could be included with a traditional transfer rate.

In the B.C. context it is not obvious how to define the number of credits required in the numerator as there is considerable variability in admission requirements to enter a university or university college. Students not eligible for direct admission to our traditional research universities following secondary school completion need to complete from 15 to 30 semester credits at a college depending upon the university to which the student wishes to transfer. And although a minimum GPA of 2.0 is nominally required, a much higher GPA is usually demanded in any given year depending upon the number of applicants. To further complicate matters, no such similar GPA or credit admission policy is in place for university colleges. University colleges which are both sending and receiving institutions would also want to measure what proportion of their students who do not transfer to another institution persist and continue to upper level studies. Certainly the number of students who transfer to another institution to pursue a degree as well as those who continue at the same institution to complete a degree are equally useful indicators of student persistence and success.

D. Transfer of Credits Model

Another interesting approach to measuring transfer would not count students but instead would count the number of credits transferred.[3] In any given year a particular college could identify the number of credits awarded to students for university transferable courses and then determine how many of these credits were actually transferred within the next four years. For example, if the students in a particular college in 1994/95 completed a total of 100,000 credits of university transferable courses and within the four-year period 1996/97 to 1999/00, 60,000 of these credits had been successfully transferred to degree granting institutions, this would generate a 60% credit transfer rate. Such a rate would not be affected by the ratio of full-time to part-time students and would be an accurate and stable measure of the magnitude of credits transferred.

## What the Transfer Rate Tells Us about Institutional Effectiveness

Extreme caution should be exercised in using a single transfer rate as a measure of institutional effectiveness. Effective transfer is a function of both sending and receiving institutional policies, practices, and culture. Using transfer rates to measure the effectiveness of the sending institution leaves out one half of the equation. For example, the impact of a major receiving institution lowering its admission quota for college transfer students would be considerable, yet the sending institutions would have no control over that variable. Transfer friendly or unfriendly regulations, changes in curricula which create articulation problems, or even receptive or unreceptive cultures at receiving institutions can affect the number of students transferring successfully from sending institutions. To measure the transfer rate from only sending institutions and to draw conclusions about institutional effectiveness from that rate may be perceived as unfairly placing the responsibility for an effective transfer system on the sending institutions, while ignoring the role played by receiving institutions.

If transfer effectiveness is to be formally measured, then it will be necessary to collect a wide range of information. Several transfer rates could be collected each addressing differing perspectives on student transfer. For example, one transfer rate could be calculated for students transferring to degree granting institutions and another transfer rate calculated for students transferring to non-degree granting institutions. Additionally, such measures as the performance of students at four-year degree granting institutions following transfer (grades earned, degree completion rates, etc.) are probably more important measures of transfer preparedness than are transfer rates per se. Measures might be developed that assess the nature of "student friendly" institutional policies, practices and support services that promote and facilitate transfer.[4] However, such measures may be hard to quantify. Finally, policies that establish admission quotas for transfer students also need to be understood in relationship to their limitation of access to transfer students and the impact on any particular transfer rate measure. This is a

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[3] This idea was suggested by Walter Wattamaniuk, Director of Analytical Studies, Simon Fraser University, in reviewing the first draft of this paper.

[4] The work of BCCAT's Task Force on Standards and Processes has identified a large array of administrative policies and practices that have the potential of being significant barriers to student transfer.

particularly important point when measuring transfer into programs with limited access possibilities and with a very high student demand (e.g. business, computing, etc.).

## A note about mobility

Transfer rates should not be considered the same as measuring and describing all of the complex patterns of student mobility. The latter should include all students regardless of the number of credits completed, the institution from which and to which the student moved, the nature of the curriculum studied, the intention or lack thereof to transfer, and the time frame during which the student changed institutions. Consideration should be given to obtaining an accurate measure of student flows independent of the calculation of transfer rates for students moving in one direction from colleges to four-year degree granting institutions.

## A note about data collection

A mechanism that can reliably track students and their credits as they move in various patterns between institutions over time is necessary both for measuring student mobility and for developing key performance indicators of transfer effectiveness. Some students will enter a degree granting institution after having attended more than one "sending" institution so careful attention will be required to avoid double counting the number of student transfers. Given the complexity of measuring student mobility and transfer effectiveness, the successful implementation of plans to require all students to have a unique personal educational number (PEN) and to create a system-wide data warehouse is essential if transfer rates are to be measured reliably. Until such mechanisms are fully operational it will be difficult to produce useful and accurate transfer rate measures.

## Recommendations

This paper was prepared following a review of key publications in the literature on transfer rates. It is clear that careful consideration should be given to any decision to collect transfer rate data given the complexity of the issues involved and the likely propensity by many to misinterpret the findings. Therefore, it is strongly recommended that:

1. ***extensive discussions occur with appropriate institutional representatives to determine whether or not transfer rates are appropriate key performance indicators of institutional effectiveness and should be collected, and if yes;***

2. ***consultations occur to determine the most appropriate numerator and denominator to be used to calculate a valid, reliable, and meaningful transfer rate(s) in a cost-effective manner, and what other measurements at what institutions be used to supplement and provide context for transfer rate calculations; and***

3. ***whether or not transfer rate measures are implemented, student tracking data that provide a detailed description of patterns of student mobility for all students entering and exiting all B.C. public post-secondary institutions be collected on a system wide level.***

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